



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/758,753 | 01/15/2004 | Satish Sundar | 8279/DSM/BCVD/JW | 6413 |
| 44182 | 7590 | 08/14/2006 | EXAMINER | |
| PATTERSON & SHERIDAN, LLP APPLIED MATERIALS INC 595 SHREWSBURY AVE SUITE 100 SHREWSBURY, NJ 07702 | | | KEENAN, JAMES W | |
| | | ART UNIT | PAPER NUMBER | |
| | | 3652 | | |
| DATE MAILED: 08/14/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|---------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/758,753 | SUNDAR ET AL. |
| | Examiner | Art Unit |
| | James Keenan | 3652 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 May 2006 and 01 June 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 23-60 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 23-60 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 1/15/04 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4/2/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3652

1. Applicant's election without traverse of Group II in the reply filed on 5/23/06 is acknowledged. Cancellation of non-elected claims 1-22 is acknowledged.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the adjustable pin (claim 48) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 3652

3. Claims 48 and 59 are objected to because of the following informalities: in claim 48, line 5, "on" should be --one--, and claim 59, line 2, "are" should be --is--.

Appropriate correction is required.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 26, 34, 36-39, 47 and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 26, there is no clear antecedent basis for a singular "jaw".

In claim 34, it is not clear what is meant by "one of the chamber or slit valve", since the chamber has been set forth in claim 33 as including the slit valve.

Claim 36 depends from claim 37 (claim 35 will be assumed).

In claim 39, the recitation that the mounting bracket is "pivotably coupled to the base portion" is believed in error; rather, the base portion is pivotably coupled to the mounting bracket.

In claim 47 and 59, the recitation that the "angular displacement" of the jaw[s] is adjustable is unclear; it is believed that the amount of angular displacement, rather than the displacement *per se*, is adjustable.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 23-26, 31-33, 35, 36, 39-43, 47, 49-56, 59, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Sundar et al (US 6,283,701).

Note that this reference is a CIP of U.S. Patent No. 6,322,312 and thus by definition discloses any subject matter thereof which may not be explicitly mentioned.

Sundar shows a semiconductor wafer processing system comprising chamber 404, robot 10 with end effector 60, and gripper assembly 90 which is “actuatable”, as broadly claimed, by a structure remote from the robot and end effector. Note that for an apparatus claim to be anticipated a reference need only show the positively recited structural limitations and be capable of performing any functional recitations. In Sundar, the gripper assembly is actuated by a translation member 82 (of which several embodiments are disclosed) disposed on the robot which causes the gripping assembly to release its clamping pressure on the wafer upon movement of the robot arm to a desired position in the chamber. However, instead of the translational member, any portion of the gripping assembly could be actuated by a structure remote from the robot. As one example, element 92 could contact wall 412 as the robot arm moved the end effector into the chamber, thus causing the grippers arms to open. Note that the claims do not require a wafer to be held by the gripper assembly when actuated.

Re claim 24, note (fig. 3-4 embodiment) jaws 120, 130, mounting bracket 80, and biasing member 114. Other embodiments may read on some or all claims as well.

Re claim 25, note the jaws comprise unlabeled base portions coupled directly to the mounting bracket through unlabeled pivot members clearly shown in the drawings, arms 90 coupled to first ends of the base portions, strikers 121, 131 coupled to second ends of the base portions, at least a portion of which extend outwardly from the base portions at a substantially normal angle thereto, and grippers 93 coupled to the second ends of the arms.

Re claims 35 and 36, the striker plate, absent any structural limitations, is considered to be the chamber wall 412 and is “positionable”, as broadly claimed, along an axis of extension of the end effector.

Re claim 43, note the structure of the gripper shown in fig. 12, including roller or “disk” 92.

Re claim 47, since the jaws pivot to open and close, the angular displacement thereof is considered to be adjustable.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 27-30, 44-46, 48, 57, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundar et al.

Re claim 27, Sundar does not show the gripper to comprise a shaft extending outwardly from the arm, although there is a shaft upon which a roller rotates (fig. 12).

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Sundar such that the shaft extended outwardly from the arm, as this would merely be an alternate equivalent design expediency, the use of which would require no undue experimentation and produce no unexpected results.

Re claim 28, the use of a bearing to reduce friction between mechanically connected elements is a well known design expediency.

Re claims 29 and 30, Sundar shows the actuating structure 82 rather than the striker to comprise a shaft with a rotatable sleeve 84 coupled thereto. It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Sundar such that the striker comprised a sleeve rotating on a

shaft, as this would merely be the reversal of parts, which has been held to require only routine skill in the art. Again, a bearing is a well known design expediency.

Re claim 48, note stop members 150 and 151. Although they are not pins, they perform the same function, and the substitution thereof is considered an obvious design expediency. Although it is not clear if either member is adjustable, col. 10, lines 25-53 disclose that the amount of retraction of the clamp fingers 90 (which is controlled by the stop members) can be adjusted. It therefore would have been obvious, if not inherent, for one of ordinary skill in the art to have made at least one stop member adjustable, since it has been held that the provision of adjustability, where needed (as explicitly mentioned in this reference), involves only routine skill in the art.

11. Claims 23-36 and 39-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundar et al in view of Smith et al (US 4,411,576).

This rejection primarily concerns claim 34 in which the structure for actuating the gripper is positively rather than functionally recited. However, it applies to the other claims in the event applicant overcomes the 102 rejection thereof.

As noted, Sundar does not disclose a structure for actuating the gripper remote from the robot and end effector.

Smith shows a robotic end effector wherein the gripping jaws thereof are moved to an open position to release an article held thereby upon contact of a portion of the end effector with a structure 161 remote from the robot and end effector (fig. 5 and 10). The structure is part of a station where processing on the article is performed.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Sundar such that the structure for actuating the gripper assembly was part of the processing chamber rather than the robot arm, as suggested by Smith, as this would allow more precise and repeatable positioning of the article at the desired location, in that the chamber wall is not subject to wear as much as the robot arm would be, and thus would not tend to come out of alignment as frequently.

12. Claims 37-38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

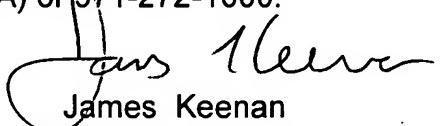
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 571-272-6925. The examiner can normally be reached on (schedule varies).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


James Keenan
Primary Examiner
Art Unit 3652

jwk
8/8/06